

REMARKS

Applicant respectfully requests further examination and reconsideration in view of the comments set forth fully below. Claims 1-12 and 15-18 were pending. Within the previous Office Action, Claims 1-12 and 15-18 were rejected. By the above amendments, Claims 1, 2, 4 and 18 have been amended. Accordingly, Claims 1-12 and 15-18 remain pending.

Rejections Under 35 U.S.C. § 103:

Within the previous Office Action, Claims 1, 2, 6-12 and 15-18 were rejected under 35 U.S.C. § 103(a) as being unpatentable over U.S. Patent Application Publication No. 2001/0036173 to Shmulevich et al. [hereinafter Shmulevich] in view of GSM 3GPP TS23.040 (V4.8.0, 06-2003) [hereinafter TS23.040] and in further view of U.S. Patent No. 6,801,781 to Provost et al. [hereinafter Provost]. The Applicants respectfully disagree.

1. Neither Shmulevich, TS 23.040, Provost nor their combination teach wherein the IP network includes an authentication server which is operable to determine the IP/SMS gateway address from the IP network via which the user equipment is communicating. Moreover, Shmulevich, TS 23.040, Provost and their combination do not teach an authentication, authorization and accounting server.

Shmulevich teaches a telecommunications system in which signalling data, voice data, packet data, etc., is communicated between a number of mobile telecommunications networks via a packet data link provided by an IP network (as opposed to communication of this data via a conventional circuit switched link). However, as recognized within the Office Action, Shmulevich does not teach wherein the IP network includes an authentication server which is operable to determine the IP/SMS gateway address from the IP network through which the user equipment is communicating. [Office Action, page 5] Also, Provost does not teach wherein the IP network includes an authentication server which is operable to determine the IP/SMS gateway address from the IP network through which the user equipment is communicating. Instead, TS 23.040 is cited for this purpose. Specifically, it is asserted that TS 23.040 teaches an authentication server by “page 92, Fig. 16a: note 1 indicates authentication procedure which indicates presence of authentication server via IP network.” [Office Action, page 6] However, just because an authentication procedure is indicated, does not mean TS 23.040 teaches wherein

the IP network includes an authentication server which is operable to determine the IP/SMS gateway address from the IP network via which the user equipment is communicating. It is stated within the MPEP that “[d]rawings and pictures can anticipate claims if they clearly show the structure which is claimed. *In re Mraz*, 455 F.2d 1069, 173 USPQ 25 (CCPA 1972).” However, Fig. 16a of TS 23.040 in no way “clearly shows” an authentication server, much less an authentication server which is operable to determine the IP/SMS gateway address from the IP network via which the user equipment is communicating. Further, all that is stated in note 1 is that “authentication [is] performed,” not that such performance is accomplished by an authentication server which is operable to determine the IP/SMS gateway address from the IP network via which the user equipment is communicating. Accordingly, TS 23.040 does not teach wherein the IP network includes an authentication server which is operable to determine the IP/SMS gateway address from the IP network via which the user equipment is communicating. As a result, neither Shmulevich, TS 23.040, Provost nor their combination teach the presently claimed invention.

Within the previous Office Action, it was asserted that when an authentication procedure is performed in an IP network, it [inherently] means that there is also an authentication server that is compatible with the IP network. [Office Action, page 26] However, within the MPEP, it is stated that, “[t]he fact that a certain result or characteristic may occur or be present in the prior art is not sufficient to establish the inherency of that result or characteristic. *In re Rijckaert*, 9 F.3d 1531, 1534 (Fed. Cir. 1993)” MPEP §2112 (IV). It is also stated within the MPEP that, “[t]o establish inherency, the extrinsic evidence ‘must make clear that the missing descriptive matter is necessarily present in the thing described in the reference, and that it would be so recognized by persons of ordinary skill. Inherency, however, may not be established by probabilities or possibilities. The mere fact that a certain thing may result from a given set of circumstances is not sufficient.’ ” *In re Robertson*, 169 F.3d 743, 745 (Fed. Cir. 1999) MPEP §2112 (IV) Thus, in order for an authentication server to be inherently taught by TS 23.040, it must be necessarily present, which is not the case. Instead, it is possible for an authentication procedure to be performed without use of a server for example by utilizing the user equipment itself. Thus, because an authentication server is not “necessarily present” as required by the MPEP, TS 23.040 does not inherently teach wherein the IP network includes an authentication server which is operable to determine the IP/SMS gateway address from the IP network via which the user equipment is communicating.

Moreover, even if it was inherent, as asserted by the Office Action, that when an authentication procedure is performed in an IP network, it means that there is also an authentication server that is compatible with the IP network. The authentication procedure described in TS 23.040 in regard to Figure 16a is not performed in an IP network, it is performed in a GSM. Thus, in any case, TS 23.040 at best teaches an authentication server that is compatible with a GSM network, not an IP network. Accordingly, TS 23.040 again would fail to teach wherein the IP network includes an authentication server which is operable to determine the IP/SMS gateway address from the IP network via which the user equipment is communicating. Therefore, neither Shmulevich, TS 23.040, Provost nor their combination teach the presently claimed invention.

Furthermore, even if Figures 16a, 18b-d and 5 of TS 23.040 teach an authentication server, with which Applicants respectfully disagree, TS 23.040 does not teach an authentication, authorization and accounting server.

2. Neither Shmulevich, TS 23.040, Provost nor their combination teach wherein the UE is directly connected to an IP network or the UE acting as an IP client.

Figures 1-5 of Shmulevich illustrate that its IP network connections exist between the various network gateways (GW) of the mobile network and not between the mobile network and the User Equipment (UE). This is illustrated for example in paragraph [0054] cited within the Office Action:

“...Gateway 74 also serves as a SMS gateway, to carry SMS messages between SMS center 42 and the switches in cellular network 22 via packet-switched network 90.”
[Shmulevich, ¶ 0054, emphasis added]

In other words, SMS messages are transmitted within the mobile network via a packet data connection, but only between switching centres. SMS data is not transmitted to individual devices (User Equipments) via an IP network. Moreover, it should be noted that the only portion of Shmulevich that would qualify as an UE is the mobile station (MS). Other items such as MCSs, and gateways are all part of the core network and not an UE. As a result, portions of Shmulevich used to teach a limitation involving an UE must include teachings regarding the MS 64.

Therefore, Shmulevich contains no teaching in which the UE (e.g. MS 64) is attached to the IP network (as required by the independent Claims 1, 6 and 10). Rather, it is the standard mobile network components (for example the base station controller 112 shown in Figure 5 and the gateways mentioned above) which are attached to the IP network. Indeed, as described in paragraphs 0014 and 0015 of Shmulevich:

“An integrated packet-switching gateway is coupled to a *cellular* network switch, typically to a MSC. The switch is normally adapted and programed ... to communicate with other switches in the cellular network over circuit-switched links ... The integrated gateway, however, *converts* the signaling , voice and other data output by the switch to packets, and routes the packets over the common packet-switched network to other switches in the cellular network.” [Shmulevich, ¶ 0014] (emphasis added)

and,

“The gateway emulates the circuit switched links of the conventional cellular network, so that this convergence is achieved substantially *without modification of the existing cellular infrastructure*. The packet switched links established *between* the gateways of the present invention are preferably used both for communications *between* switches within a given *cellular network* and for communications *between* one *cellular network* and another. The use of these gateways thus enhances the scalability of the *cellular network*.” [Shmulevich, ¶ 0015] (emphasis added)

Therefore, all that is taught in Shmulevich is a UE communicating with a mobile network in a conventional manner (via the conventional cellular network) except for the fact that the mobile network communicates data between core network components via a packet switched IP network connection. The independent claims were previously amended to specify that the UE acts as an IP client. As will be appreciated, in the context of IP network communication, this necessitates that the user equipment have its own IP address and is communicating data directly via the IP network. As evidenced above, such an IP client connection is not taught by Shmulevich, which instead teaches “[c]ontrol of call connections is thus maintained at the MSC level.” [Shmulevich, ¶ 0016] Accordingly, Shmulevich does not teach that the UE acts as an IP client.

Within the previous Advisory Action, it was asserted that in Shmulevich the “paragraph 54 lines [4-7] clearly suggest cellular infrastructure is replaced by IP network, which the examiner interprets as IP network directly communicating with UE.” [Advisory Action] However, nowhere in paragraph 54 nor the associated Figure 3A is a UE shown connected directly to an IP network. Indeed, nowhere is a UE (e.g. MS 64) even discussed or included,

much less being described as connected to an IP network. The simple phrase “cellular infrastructure is replaced by IP network” is meaningless without context giving an explanation as to what is meant by the “cellular infrastructure”. Here, it is clear from the context of the associated Figure 3A, that “cellular infrastructure” is limited to the core network components shown in Figure 3A. Thus, it would not be reasonable to interpret the IP network to extend to UEs that are not shown nor described in the Figure or accompanying text. In response, within the instant Office Action, it is asserted that “it is well known in the art that ‘cellular infrastructure’ [means] all the network equipment other than [a] User terminal.” However, as described above, the term “cellular infrastructure” can refer to either the entirety of the infrastructure or just a portion depending on the context. In this case, it is at least clear from Figure 3A that the mobile switching centers (MSCs) are not replaced by the IP network, and thus “cellular infrastructure” could not be referring to all of the infrastructure components. Indeed, as described above, Shmulevich states “[t]he use of [the] gateways [is to] enhance the scalability of the cellular network,” not to entirely replace it. [Shmulevich, ¶ 0015] Accordingly, Shmulevich does not teach the IP network of Figure 3A connects directly to UEs.

Moreover, Shmulevich also does not inherently teach the IP network of Figure 3A connects directly to UEs. As described above, within the MPEP, it is stated that, “[t]he fact that a certain result or characteristic may occur or be present in the prior art is not sufficient to establish the inherency of that result or characteristic. In re Rijckaert, 9 F.3d 1531, 1534 (Fed. Cir. 1993)” MPEP §2112 (IV) As also described above, it is also stated within the MPEP that, “[t]o establish inherency, the extrinsic evidence ‘must make clear that the missing descriptive matter is necessarily present in the thing described in the reference, and that it would be so recognized by persons of ordinary skill. Inherency, however, may not be established by probabilities or possibilities. The mere fact that a certain thing may result from a given set of circumstances is not sufficient.’” In re Robertson, 169 F.3d 743, 745 (Fed. Cir. 1999) MPEP §2112 (IV) Here, as described above, Shmulevich clearly does not explicitly nor inherently teach UEs directly connected to the IP network (e.g., user equipment acting as an Internet Protocol (IP) client). Even if there is a probability or possibility that such a connection could exist, the extrinsic evidence of Figure 3A and the accompanying text does not “make clear that the missing descriptive matter is necessarily present.” Indeed, it does not discuss nor illustrate the missing element of UEs at all. All that paragraph 54 of Shmulevich describes is an IP network between MSCs 28, 30 and 32, not packet connectivity to the mobile station (MS) 64. Accordingly, again, Shmulevich does not teach user equipment acting as an Internet Protocol (IP) client.

Within the previous Office Action, it was asserted that the additional reference of Provost (col. 3, lines 24-26 and 34-47) teach a UE communication directly with an IP network. [Office Action, page 27] However, the cited portion of Provost merely teaches a mobile station 14 is provided indirect access to a packet-based network 22 through the GGSN 20 in order to perform packet based communications with another node. [Provost, col. 3, lines 34-37 and Fig. 1] Thus, similar to Shmulevich, the mobile station 14 of Provost is not directly connected with an IP network, but instead can only communicate with the IP network indirectly through the GGSN. As a result, nowhere does Provost teach a UE directly in communication with an IP network.

Within the Advisory Action, it was also asserted that Shmulevich teaches the user equipment acting as an Internet Protocol (IP) client by Shmulevich: paragraph 0024 discloses LAN linking to the control unit. [Advisory Action] However, the LAN described in paragraph [0024] links the control unit and the media gateway unit; it does not link to a UE (e.g. MS 64). [Shmulevich, ¶ 0024 and Figure 6] Furthermore, it is stated within the MPEP that, “[a] prior art reference must be considered in its entirety, i.e., as a whole, including portions that would lead away from the claimed invention.” W.L. Gore & Associates, Inc. v. Garlock, Inc. 721 F.2d 1540 (Fed. Cir. 1983); MPEP § 2141.02 (VI). As a result, in order to understand paragraph [0024] one must also look to paragraph [0018] which describes that a gateway apparatus includes such a control unit and such a media gateway unit. Indeed, in light of paragraph [0018], it is clear that paragraph [0024] simply indicates that the connection between the control unit and the media gateway unit can be a LAN. [Shmulevich, ¶¶ 0018 and 0024 and Figure 6] Thus, this section has nothing to do with UEs (e.g. MS 64) and instead is entirely limited to the LAN within the core network. Indeed, throughout all of Shmulevich, the only teaching regarding UEs is the mobile station (MS) 64 described in paragraph [0004] and shown in Figure 1. However, it is clear from Figure 1 and the accompanying text that MS 64 is not acting as an IP client. Thus, Shmulevich does not teach user equipment acting as an Internet Protocol (IP) client. Accordingly, neither Shmulevich, TS 23.040, Provost nor their combination teach the presently claimed invention.

3. The combination of Shmulevich, TS 23.040 and Provost is improper because Shmulevich teaches away, there is insufficient motivation to combine the references, and Provost is non-analogous art.

Shmulevich teaches away from the presently claimed invention. The object of Shmulevich is to provide a cheaper means of communication by avoiding the use of Public

Switched Telephone Network (PSTN) by using lower-cost packet network infrastructure. [Shmulevich, ¶ 15] To achieve this objective, Shmulevich teaches to replace parts of the PSTN by an IP network, as is shown in Figure 2, reference item 76 of Shmulevich and described as “Gateways 74 and 78 communicate with one another via a packet-switched network 76, preferably an IP network, rather than through the facilities of PSTN 26 as in Fig. 1.” [Shmulevich, ¶ 49] Additionally, Shmulevich teaches “gateway 74 may be linked to SMS center 42, so that SMS messages between network 22 and 24 are carried over packet switching network 76, rather than through the signaling infrastructure of the cellular networks and of PSTN 26.” [Shmulevich, ¶ 53] Thus, Shmulevich is clearly focused on using a cheap IP network instead of an expensive PSTN. And since the section of the network between two cellular networks 22 and 24 belongs to respective cellular operators “Cellco 1” and “Cellco 2,” there is no incentive as the section is already inexpensive by being under the control of operators. [Shmulevich, ¶ 04] In contrast to Shmulevich, the presently claimed invention is directed towards delivering an SMS message to a user equipment, when the user equipment is attached to an IP network. Shmulevich clearly teaches away from having an IP connection to user equipment. There is no incentive of modifying Shmulevich as this would require replacing the communication path from the gateways 74 and 78 via the SMS centers 42 and 52 down to the user equipment by an IP connection. There is no advantage of doing this and it would involve complex modifications.

Further, one skilled in the art would have no motivation to combine Provost with the teachings of Shmulevich or TS23.040. Specifically, Provost appears to be cited as teaching user equipment acting as an Internet Protocol (IP) client. However, referring to Figure 1 of Provost, a mobile station 14 is clearly shown separated from a packet data network 22 by a plurality of base station systems 16, a serving GPRS support node 18, and a gateway GPRS support node 20. Furthermore, there is no indication that the path from the SM-SC or to the SM-SC is an IP path. Additionally, there is no motivation to combine Provost with either Shmulevich or TS23.040. Provost teaches a system for a pre-paid SMS service. An SMS is sent by the system if the user of a mobile station has sufficient funds according to a database included in the system. [Provost, col. 5, lines 37-41] Therefore, one would have no motivation to combine the pre-paid SMS service with the teachings of Shmulevich or TS23.040.

Moreover, Provost is non-analogous art and therefore should not be considered. Indeed, “[i]n order to rely on a reference as a basis for rejection of an applicant's invention, the reference must either be in the field of Applicant's endeavor or, if not, then be reasonably pertinent to the particular problem with which the inventor was concerned.” *In re Oetiker*, 977 F.2d 1443, 1446,

24 USPQ2d 1443, 1445 (Fed. Cir. 1992). Here, Provost is not in the same field as the presently claimed invention because although Provost is concerned with using an “artificial” APN in the HLR/HSS as a flag to determine if the user has sufficient credit to deliver an SMS message, delivery of the SMS itself uses the same mechanism as is currently defined in GSM/UMTS communication standards (*not an IP network*). Specifically, in contrast with the presently claimed invention, Provost attaches a mobile station to a GPRS network and subsequently establishes a PDP context. [Provost, col. 4, line 51 to col. 5, line 20 and Fig. 3] On the other hand, the presently claimed invention relates to delivering SMS messages to and sending SMS messages from a user equipment which is connected via an *IP network* and has a pre-existing IP address (thus, there is no need to attach to the GPRS and establish a PDP context). This is a significant difference as it indicates how the methods of Provost and the presently claimed invention each relate to entirely different communication schemes (i.e. with vs. without the need for a PDP context). Indeed, because of these differences the problems encountered are also different and thus the problems of the presently claimed invention are not pertinent to the methods of Provost. Accordingly, it is clear that Provost is non-analogous art and therefore should not be considered.

Indeed, even if Provost is analogous art, there is no motivation to combine Provost with Shmulevich and TS 23.040. Within the Office Action of June 24, 2009, the only justification for the combination is “for the purpose of providing compatibility with GPRS standard.” [Office Action, page 7] However, no hint, teaching or suggestion can be found in either Provost, Shmulevich or TS 23.040 that suggests their combination. More is required to justify the combination of references. Indeed, as described above, the whole purpose of Shmulevich is to provide a low cost cellular communications system. Contrarily, the combination of Provost with Shmulevich would only add cost to the communication system, not lower it. As a result, it is clear that there would be no motivation to combine the teachings of Shmulevich and TS 23.040 with the teachings of Provost. Accordingly, the combination is improper and should be withdrawn.

4. Neither Shmulevich, TS 23.040, Provost nor their combination teach an SMS-Inter-Working mobile switching centre (SMS-IWMSC) for delivering SMS messages from the mobile device to the SME.

By the amendments above, Claim 18 has been amended to include the limitation of an SMS-Inter-Working mobile switching centre (SMS-IWMSC) for delivering SMS messages from

the mobile device to the SME. Shmulevich, TS 23.040, Provost and their combination do not teach this limitation.

5. The Claims are patentable over Shmulevich, TS 23.040, Provost and their combination.

The independent Claim 1 is directed to a telecommunications system for communicating a Short Message Service (SMS) message to a user equipment using a subscriber identity number terminating on an Internet Protocol network using an Internet Protocol (IP), *the user equipment acting as an Internet Protocol (IP) client*. The system of Claim 1 comprises a short message service centre (SM-SC), a gateway mobile switching centre (GMSC) of an SMS network for communicating SMS messages, an Internet Protocol/SMS (IP/SMS) gateway for communicating between the SMS network and the IP network and a home location database (HLR/HSS) for maintaining address data identifying a current location of a user equipment, the gateway mobile switching centre being operable in response to the SMS message received from the short message service centre to interrogate the home location database for an address to which the SMS message should be sent, the home location database being operable to provide the gateway mobile switching centre with an address of the IP/SMS gateway stored in association with the subscriber identity number, the gateway switching centre being operable to send the SMS message to the IP/SMS gateway, the IP/SMS gateway being operable to retrieve an Internet Protocol address corresponding to the subscriber identity number stored in an IP/SMS database associated with the IP/SMS gateway, and to communicate the SMS message to the user equipment at the retrieved IP address via the IP network, wherein the IP network includes an authentication, authorization and accounting server which is operable to determine the IP/SMS gateway address from the IP network via which the user equipment is communicating, and to communicate the IP/SMS gateway address to the home location database, the IP/SMS gateway address being stored in the home location database in association with the subscriber identity number for retrieval by the gateway mobile switching centre in response to the received SMS message. As described above, the combination of Shmulevich and TS 23.040 with Provost is improper. As further described above, neither Shmulevich, TS23.040, Provost nor their combination teach user equipment acting as an Internet Protocol (IP) client. Moreover, as described above, neither Shmulevich, TS 23.040, Provost nor their combination teach wherein the IP network includes an authentication, authorization and accounting server which is operable to determine the IP/SMS gateway address from the IP network via which the user equipment is

communicating. For at least these reasons, the independent Claim 1 is allowable over the teachings of Shmulevich, TS23.040, Provost and their combination.

Claims 2 and 15 are both dependent upon the independent Claim 1. As discussed above, the independent Claim 1 is allowable over the teachings of Shmulevich, TS23.040, Provost and their combination. Accordingly, Claims 2 and 15 are both also allowable as being dependent upon an allowable base claim.

The independent Claim 6 is directed to a method of communicating a Short Message Service (SMS) message to a user equipment using a subscriber identity number terminating on an Internet Protocol (IP) network using an Internet Protocol (IP), *the user equipment acting as an Internet Protocol (IP) client*. The method of Claim 6 comprises maintaining address data identifying a current location of the user equipment in a home location database, receiving the SMS message at a gateway mobile switching centre (GMSC) of an SMS network for communicating the SMS message, providing, to the gateway mobile switching centre, from the home location database an address of an Internet Protocol/SMS gateway for communicating between the SMS network and the IP network, sending the SMS message to the IP/SMS gateway, retrieving the IP address corresponding to the subscriber identity number from an IP/SMS database associated with the IP/SMS gateway, and communicating the SMS message to the user equipment at the retrieved IP address via the IP network, wherein the maintaining the address data comprises determining the IP/SMS gateway address from the IP network via which the user equipment is communicating using an authentication server connected to the IP network, communicating the IP/SMS gateway address from the authentication server to the home location database, and storing the IP/SMS gateway address in the home location database in association with the subscriber identity number for retrieval in response to the received SMS message. As described above, the combination of Shmulevich and TS 23.040 with Provost is improper. As further described above, neither Shmulevich, TS23.040, Provost nor their combination teach user equipment acting as an Internet Protocol (IP) client. Moreover, as described above, neither Shmulevich, TS 23.040, Provost nor their combination teach wherein the IP network includes an authentication server which is operable to determine the IP/SMS gateway address from the IP network via which the user equipment is communicating. For at least these reasons, the independent Claim 6 is allowable over the teachings of Shmulevich, TS23.040, Provost and their combination.

Claims 7-9 and 16 are all dependent upon the independent Claim 6. As discussed above, the independent Claim 6 is allowable over the teachings of Shmulevich, TS23.040, Provost and

their combination. Accordingly, Claims 7-9 and 16 are all also allowable as being dependent upon an allowable base claim.

The independent Claim 10 is directed to a telecommunications system for communicating a Short Message Service (SMS) message to a user equipment using a subscriber identity number terminating on an Internet Protocol (IP) network using an Internet Protocol (IP), *the user equipment acting as an Internet Protocol (IP) client*. The system of Claim 10 comprises means for maintaining address data identifying a current location of the user equipment in a home location database, means for receiving the SMS message at a gateway mobile switching centre (GMSC) of an SMS network for communicating the SMS message, means for providing, to the gateway mobile switching centre, from the home location database an address of an Internet Protocol/SMS gateway for communicating between the SMS network and the IP network, means for sending the SMS message to the IP/SMS gateway, means for retrieving the IP address corresponding to the subscriber identity number from an IP/SMS database associated with the IP/SMS gateway, and means for communicating the SMS message to the user equipment at the retrieved IP address via the IP network, wherein the means for maintaining the address data comprises means for determining from an authentication server forming part of the IP network the IP/SMS gateway address via which the user equipment is communicating, means for communicating the IP/SMS gateway address from the authentication server to the home location database, and means for storing the IP/SMS gateway address in the home location database in association with the subscriber identity number for retrieval in response to the received SMS message. As described above, the combination of Shmulevich and TS 23.040 with Provost is improper. As further described above, neither Shmulevich, TS23.040, Provost nor their combination teach user equipment acting as an Internet Protocol (IP) client. Moreover, as described above, neither Shmulevich, TS 23.040, Provost nor their combination teach wherein the IP network includes an authentication server which is operable to determine the IP/SMS gateway address from the IP network via which the user equipment is communicating. For at least these reasons, the independent Claim 10 is allowable over the teachings of Shmulevich, TS23.040, Provost and their combination.

Claims 11, 12 and 17 are all dependent upon the independent Claim 10. As discussed above, the independent Claim 10 is allowable over the teachings of Shmulevich, TS23.040, Provost and their combination. Accordingly, Claims 11, 12 and 17 are all also allowable as being dependent upon an allowable base claim.

The independent Claim 18 is directed to a network of devices for communicating a Short Message Service (SMS) message to a mobile device using a subscriber identity number terminating on an Internet Protocol network using an Internet Protocol (IP), the mobile device acting as an Internet Protocol (IP) client, the network of devices comprising a short message entity (SME), a short message service centre (SM-SC), an SMS-Inter-Working mobile switching centre (SMS-IW MSC) for delivering SMS messages from the mobile device to the SME, a gateway mobile switching centre (GMSC) of an SMS network for communicating SMS messages, an Internet Protocol/SMS (IP/SMS) gateway for communicating between the SMS network, the mobile device and the IP network and a home location database (HLR/HSS) for maintaining address data identifying a current location of the mobile device, the gateway mobile switching centre being operable in response to the SMS message received from the short message service centre to interrogate the home location database for an address to which the SMS message should be sent, the home location database being operable to provide the gateway mobile switching centre with an address of the IP/SMS gateway stored in association with the subscriber identity number, the gateway switching centre being operable to send the SMS message to the IP/SMS gateway, the IP/SMS gateway being operable to retrieve an Internet Protocol address corresponding to the subscriber identity number stored in an IP/SMS database associated with the IP/SMS gateway, and to communicate the SMS message to the mobile device at the retrieved IP address via the IP network, wherein the IP network includes an authentication server which is operable to determine the IP/SMS gateway address from the IP network via which the mobile device is communicating, and to communicate the IP/SMS gateway address to the home location database, the IP/SMS gateway address being stored in the home location database in association with the subscriber identity number for retrieval by the gateway mobile switching centre in response to the received SMS message, wherein the home location database sets for at least the subscriber identity number of the mobile device, a flag indicative of whether the mobile device is currently communicating via the IP network, the address of the IP/SMS gateway to which SMS messages should be sent being stored in association with the flag. As described above, the combination of Shmulevich and TS 23.040 with Provost is improper. As further described above, neither Shmulevich, TS23.040, Provost nor their combination teach user equipment acting as an Internet Protocol (IP) client. Moreover, as described above, neither Shmulevich, TS 23.040, Provost nor their combination teach wherein the IP network includes an authentication server which is operable to determine the IP/SMS gateway address from the IP network via which the user equipment is communicating. Even further, as described above, the

prior art does not teach a network of devices wherein the home location database sets for at least the subscriber identity number of the mobile device, a flag indicative of whether the mobile device is currently communicating via the IP network, the address of the IP/SMS gateway to which SMS messages should be sent being stored in association with the flag. Further, neither Shmulevich, TS 23.040, Provost nor their combination teach an SMS-Inter-Working mobile switching centre (SMS-IW MSC) for delivering SMS messages from the mobile device to the SME. For at least these reasons, the independent Claim 18 is allowable over the teachings of Shmulevich, TS23.040, Provost and their combination.

Within the previous Office Action, Claims 3-5 and 18 were rejected under 35 U.S.C. § 103(a) as being unpatentable over Shmulevich in view of TS23.040, Provost and further in view of Uyless Black (Mobile & Wireless Networks published in 1999) [hereinafter Uyless]. The Applicants respectfully disagree.

It was stated within the previous Office Action that Uyless teaches that GPRS class A and B (stations) monitors (sic) packet switched system which refers to having indicator or flag to monitor. It appears therefore that it is considered within the Office Action that this teaches the monitoring and setting of a flag in dependence on whether a GPRS UE is communicating via an IP network. The Applicants respectfully disagree with this conclusion. In Uyless, the citation is actually explaining the capabilities of different classes of GPRS user equipment. Class A stations (e.g., UEs) can support both circuit switched and packet switched data traffic simultaneously (for example engaging in a circuit switched voice call and a packet switch data call at the same time), as opposed to class B stations which can attach to both circuit switched systems and packet switch systems whilst *monitoring* both systems, but can only support traffic for either circuit switch or packet switched traffic at any one time. The fact that a class B station is capable of “monitoring” both circuit switched and packet switched networks does not imply that a flag is set when the UE is attached to an IP network, it simply means that the UE monitors the air interface for activity on the packet switched connection. Furthermore, the independent Claim 5 has been amended by the previous amendments to specify that the flag indicates if the user equipment is acting as an IP client. This is clearly not taught in Uyless, as a GPRS packet switched connection does not make the UE an IP client (connected to an IP network with an IP address). Accordingly, neither Shmulevich, TS23.040, Provost, Uyless nor their combination teach a flag indicating if the user equipment is acting as an IP client.

Within the Office Action of June 24, 2009, in the Response to Arguments section and repeated in the Advisory Action, it was stated that “whenever there is monitoring functionality

[is] performed there has to be a mechanism that will allow the class B station to differentiate between two switching mechanism or some kind of indication that tells the system on which system UE is attached to.” [Office Action, page 23] Applicants respectfully disagree. More is being read into Uyless than is actually taught. This is evidenced by the vagueness of the Response to Arguments which states in very general terms “a mechanism...or some kind of indication.” [Office Action, page 23] Uyless simply does not teach setting a flag. More specifically, Uyless does not teach setting a flag indicating UE is attached to an IP network as claimed in the claimed invention.

Claims 3 and 4 are both dependent upon the independent Claim 1. As discussed above, the independent Claim 1 is allowable over the teachings of Shmulevich, TS23.040, Provost and their combination. Accordingly, Claims 3 and 4 are both also allowable as being dependent upon an allowable base claim.

The independent Claim 5 is directed to a home location database stored on a server, the home location database for maintaining address data identifying a current location of a user equipment, the address data providing an address to which an SMS message addressed to the user equipment at a subscriber identity number should be sent. The home location database of Claim 5 is arranged to provide a gateway mobile switching centre with an address of an IP/SMS gateway for communicating the SMS message to the user equipment at the subscriber identity number, when the user equipment is communicating via an Internet Protocol (IP) network using an Internet Protocol, communication being terminated on the IP network and *the user equipment acting as an Internet Protocol (IP) client*, the address of the IP/SMS gateway being provided by an authentication server, which determines the IP/SMS gateway from the IP network via which the user equipment is communicating the home location database being arranged to store for at least the subscriber identity number of the user equipment, a flag indicative of whether the user equipment is currently communicating via the IP network *and acting as an Internet Protocol (IP) client*, and if the flag is set to indicate that the user equipment is currently communicating via the IP network, an address of the IP/SMS gateway to which SMS messages should be sent. As described above, neither Shmulevich, TS23.040, Uyless, Provost nor their combination teach a flag indicating if the user equipment is acting as an Internet Protocol (IP) client. For at least these reasons, the independent Claim 5 is allowable over the teachings of Shmulevich, TS23.040, Provost, Uyless and their combination.

The independent Claim 18 is directed to a network of devices for communicating a Short Message Service (SMS) message to a mobile device using a subscriber identity number

terminating on an Internet Protocol network using an Internet Protocol (IP), the mobile device acting as an Internet Protocol (IP) client, the network of devices comprising a short message entity (SME), a short message service centre (SM-SC), an SMS-Inter-Working mobile switching centre (SMS-IW MSC) for delivering SMS messages from the mobile device to the SME, a gateway mobile switching centre (GMSC) of an SMS network for communicating SMS messages, an Internet Protocol/SMS (IP/SMS) gateway for communicating between the SMS network, the mobile device and the IP network and a home location database (HLR/HSS) for maintaining address data identifying a current location of the mobile device, the gateway mobile switching centre being operable in response to the SMS message received from the short message service centre to interrogate the home location database for an address to which the SMS message should be sent, the home location database being operable to provide the gateway mobile switching centre with an address of the IP/SMS gateway stored in association with the subscriber identity number, the gateway switching centre being operable to send the SMS message to the IP/SMS gateway, the IP/SMS gateway being operable to retrieve an Internet Protocol address corresponding to the subscriber identity number stored in an IP/SMS database associated with the IP/SMS gateway, and to communicate the SMS message to the mobile device at the retrieved IP address via the IP network, wherein the IP network includes an authentication server which is operable to determine the IP/SMS gateway address from the IP network via which the mobile device is communicating, and to communicate the IP/SMS gateway address to the home location database, the IP/SMS gateway address being stored in the home location database in association with the subscriber identity number for retrieval by the gateway mobile switching centre in response to the received SMS message, wherein the home location database sets for at least the subscriber identity number of the mobile device, a flag indicative of whether the mobile device is currently communicating via the IP network, the address of the IP/SMS gateway to which SMS messages should be sent being stored in association with the flag. As described above, neither Shmulevich, TS23.040, Uyless, Provost nor their combination teach a flag indicating if the user equipment is acting as an Internet Protocol (IP) client. Further, neither Shmulevich, TS23.040, Uyless, Provost nor their combination teach a network of devices wherein the home location database sets for at least the subscriber identity number of the mobile device, a flag indicative of whether the mobile device is currently communicating via the IP network, the address of the IP/SMS gateway to which SMS messages should be sent being stored in association with the flag. Additionally, neither Shmulevich, TS23.040, Uyless, Provost nor their combination teach an SMS-Inter-Working mobile switching centre (SMS-IW MSC) for

delivering SMS messages from the mobile device to the SME. For at least these reasons, the independent Claim 18 is allowable over the teachings of Shmulevich, TS23.040, Provost, Uyless and their combination.

Applicants respectfully submit that the claims are in a condition for allowance, and allowance at an early date would be appreciated. Should the Examiner have any questions or comments, they are encouraged to call the undersigned at (408) 530-9700 to discuss the same so that any outstanding issues can be expeditiously resolved.

Respectfully submitted,
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